

February 3, 2004

**CALL FOR SUBMISSIONS (CFS)
CFS Number 2045DRI**

**California Department of Transportation, Division of Research and Innovation
2004-2005 Full Proposal Guidelines**

A CONTRACT MAY OR MAY NOT BE AWARDED FROM THIS CFS.

The Division of Research and Innovation (DRI) of the California Department of Transportation (Department) is requesting research proposals from public research institutions: colleges, universities, and government agencies that bring practical and innovative solutions to the Department's research problems. DRI's first annual Call for Submissions (CFS) is based on problem statements derived from customer needs. This CFS focuses on the application of solutions to meet the Department's mission of **improving mobility across California**. This research will specifically address the following Department goals:

- **SAFETY:** achieve the best safety record in the nation
- **RELIABILITY:** reduce traveler delays due to roadwork and incidents
- **PERFORMANCE:** deliver record levels of transportation system improvements
- **FLEXIBILITY:** make transit a more practical travel option
- **PRODUCTIVITY:** improve the efficiency of the transportation system

You are invited to review and respond to this **CFS Number 2045DRI**, entitled, "**California Department of Transportation, Division of Research and Innovation 2004-2005 Research Problem Statements**". The proposals will be submitted in a two-tiered process. We are requesting pre-proposals of about 2-4 pages in length. Those respondents who submit successful pre-proposals will be asked to then submit full-proposals of between 10-20 pages in length. Please see schedule in Proposal Submission/Evaluation Process. In submitting your documents, you must comply with the instructions found herein. Reference the attached CFS for detailed information regarding:

- Background
- Research Needs
- Proposal Format and Content
- Questions and Answers
- Proposal Submission / Evaluation Process
- General Information

If you have questions, the contact person for this CFS is:

Tori Kanzler, Division of Research and Innovation
California Department of Transportation
Email: tori.kanzler@dot.ca.gov
Fax Number: (916) 654-9977

Interested parties should submit electronic documents to:

Tori Kanzler at tori.kanzler@dot.ca.gov

And hardcopy documents to:

California Department of Transportation
Division of Research and Innovation, MS-83
1227 "O" Street
P.O. Box 942873
Sacramento, CA 94273-0001
Attention: Tori Kanzler

This CFS contains the entire terms and conditions relating to the research problem statements, and no other terms, conditions or representations should be considered unless issued in writing as an addendum to this CFS.

Full proposals must be received no later than 5:00 P.S.T. on March 10, 2004
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Background

The California Department of Transportation (Department) is the manager of interregional transportation services; more specifically, the Department has the traditional role of owner and operator of the 15,000 mile State Highway System. The Department promotes California's economic vitality and enhances its citizens' quality of life by providing for the movement of people, goods, services and information. The Department is responsible for the delivery of the State's Transportation Improvement Program; planning, designing, building, operating and maintaining California's state highway systems. In addition to a changing mix of transportation modes - such as highways, rail, mass transit, bicycle, pedestrian, and aeronautics, the Department coordinates the solutions to complex issues such as land use, environmental standards, and the formation of partnerships between private industry and local, State and Federal agencies to promote productivity, reliability, safety, flexibility and performance in the State of California. For more information see: www.dot.ca.gov

The Department has developed a new research process guided by the Research and Deployment Steering Committee (RDSC). The RDSC, in turn, created Program Steering Committees (PSCs) and Technical Advisory Panels (TAPs) to assist in developing the research agenda and deploying research products.

The functional Divisions lead the PSCs, and the TAPs reside in those Divisions. The TAPs will include technical experts from Divisions, Districts and external agencies. The TAPs developed the enclosed problem statements, and will review and rank resulting research proposals. The PSCs and the RDSC will make the final determination on which proposals will become research projects. With this system, the Department hopes to provide more customer participation throughout the research process, and ownership of research products.

Research Needs

Highlight issues in this CFS are:

- The CFS is organized according to DRI's customers' needs within the Department, including Design/Construction, Environmental, Planning/Policy/System Information, Transportation Safety and Mobility and Roadway Appurtenances
- Respondents should demonstrate how their proposals would benefit the traveling public and contribute to meeting the five Department goals.
- The CFS identifies important problems that need to be solved, but generally does not specify how those problems should be solved. This will allow respondents the flexibility to propose new and innovative solutions.
- Proposals need to be focused toward implementation of their results to improve transportation. In order to facilitate implementation, respondents are encouraged to engage in collaborations with industrial and public agency partners and to consider

how the results of their research can be communicated to those who deploy and operate transportation systems (technology transfer).

- In order to promote synergy among diverse research projects, respondents should consider how their projects could be integrated with other research projects, as well as transportation planning and deployment projects, in specific California regions or corridors.
- Department staff will work with the proposal authors to strengthen the project's implementation effectiveness and to facilitate their integration with other new and ongoing research, planning and deployment projects.
- Multi-disciplinary and multi-campus research teams are encouraged in order to integrate diverse research capabilities.

Two-Tiered process

The first stage of the proposal process will be the pre-proposal. Within 30 days of the pre-proposal submittal deadline, successful respondents will receive a request to submit a formal, detailed full-proposal or notice declining interest in the pre-proposal. The respondent may also receive comments from Department personnel for purposes of technical clarification of the proposed effort. The second stage of the process will be the full proposal, which will most likely fall in the range from 10-20 pages single-spaced (excluding appendices).

Proposal Format and Content

The full proposal should address each of the items requested in the pre-proposal in additional detail, as well as addressing comments and concerns resulting from the pre-proposal screening. The body of the proposal will be limited to twenty (20) pages at the maximum, not including curriculum vitae.

Each proposal, including curriculum vita (e), budget, timeline and cover page, must be in a single file, either in PDF or Word format. (no zipped files) Research proposals should provide a detailed description of the research to be undertaken. The following general outline for the body of the proposal should be followed.

Cover Page

The cover page must include the problem statement number, proposal title, lead researcher(s) name and affiliation, key supporting researcher(s) name and affiliation, project budget for each fiscal year and a total budget. Note that the state fiscal year ends June 30.

Summary

- One paragraph summary of the problem statement, significance of research contribution, and contribution of research to problem statement.

- One or two paragraph summary of the research plan, deliverables, research contribution to solving specific transportation problems, and how the final research product can be implemented to solve California's transportation problems.

Background/Business Case

- Review related/complementary research completed or underway in the problem area (literature search)
- State project scope, objectives, and motivation, in light of the Department's goals.
- Describe the impact of the proposal on the existing transportation issue/problem/need.
- Identify the anticipated customers/users.
- Explain how this project will improve transportation system safety, efficiency or effectiveness in the short or long term
- What are the consequences for Caltrans and its customers if the problem/opportunity is not addressed?

Research Outcome

- Describe the outcome of this research in terms of next steps; will the outcome result in a product that is usable by the practitioner? If not, what further research or additional activities would be required to reach that point? Provide a preliminary timeline for the final product. Be as specific as possible. The Department is looking for applied research and results.
- Provide a benefit/cost assessment, which shows the economic benefits that will be derived for the ultimate product which is the subject of the work.

Methodology

- Explain the proposed research methods in sufficient detail to enable evaluation of feasibility, originality and significance of the proposal. If appropriate to the content of the proposal, describe the current technology that is the subject of the proposal. If the research project involves selection of a specific technology solution from among multiple alternative approaches, explain the reasoning behind that selection:
 - Describe the alternatives
 - Identify the alternative that best satisfies the objectives
 - Explain why the selected solution was picked over the other alternatives

Research Plan and Deliverables

Provide a research plan with specific tasks, milestones and deliverables. Deliverables should be described precisely and in depth, and should be clearly related to the methodology. The proposal should indicate how staff would be assigned by task.

Multi-partner proposals should clearly identify which party is responsible for each task. Quarterly progress reports/meetings are required for all projects, regardless of the duration of the project, and every project must have a final report.

Timeline

Provide a detailed list of project tasks and the duration of each task in a Gantt chart format, including significant milestones and deliverables.

Budget

A detailed budget for the proposed work is required. Budget categories must include at minimum: number and type of personnel, equipment, supplies & expenses, travel, and overhead. Furthermore, each equipment item must be specifically identified. All overhead type of expenses must also be detailed and justified; e.g., benefit rates, etc. Please note that in addition to the total proposed budget, a breakdown by category is required for each fiscal year, which runs from July 1 to June 30.

Research Team

Describe previous experience and training in relevant areas of research (one-two paragraphs). When relevant, highlight the contribution of research collaborations (across disciplines and campuses or with private sector) to the project.

Curriculum Vitae

A detailed resume of the lead researcher(s) as well as brief resumes of all other researchers.

At the conclusion of the project, the researcher(s) will deliver a final report and present his/her results in a workshop forum, including a full explanation of the applied usefulness of the research. This may be done as a single-topic workshop or bundled with other related topics. (Expenses should be included as part of the Budget.)

Questions and Answers

Respondents with questions about the requirements of this CFS must submit those questions in writing to the email address shown below. Technical questions should be emailed to the Technical Advisory Panel (TAP) Coordinator, and copied to the email address below, as directed in the letter to the Respondent. Question submittal must include the individual's name, the name and address of the research institution. All questions must be received no later than **March 5, 2004**. Questions will be answered directly, and posted on the Department's DRI website by March 9, 2004. (See web link below).

E-MAILED TO:

Email address: tori.kanzler@dot.ca.gov

After the deadline for question submittal has passed, written responses to questions will be collectively compiled, and posted on the Department's DRI website. A hard copy of written responses will be provided upon request. Refer to **Schedule**, to get this CFS's schedule of events and dates.

<http://www.dot.ca.gov/research/CFS>

Proposal Submission/Evaluation Process

Proposal Submittal, Modification, Resubmittal, and Withdrawal

Proposals should be e-mailed, and two hardcopies should be mailed or delivered by hand. Proposals may **not** be sent by fax machine.

For emailed proposals, the CFS# and Problem Statement# must be in the subject line, and Project Title and Respondent's Name/Research Institution must be in the email text. Respondents are to submit proposals to:

Tori Kanzler at tori.kanzler@dot.ca.gov

For mailed or delivered proposals, the following information must be placed on the lower left corner of the submittal shipping package: CFS#, Problem Statement #, Project Title and Respondent's Name/Research Institution. Respondents are to submit an original proposal marked "ORIGINAL" and one (1) copy of the proposal to:

California Department of Transportation
Division of Research and Innovation, MS-83
1227 "O" Street
P.O. Box 942873
Sacramento, CA 94273-0001
Attention: Tori Kanzler

Respondents submitting pre-proposals may modify or withdraw the proposal at any time prior to the submittal deadline. Such modification or withdrawal of a proposal shall be in writing and submitted by the same person submitting the original proposal.

If the modification requested is only an addition to a proposal, one e-mailed and two (2) hard copies of the modification shall be submitted in a sealed package, boldly marked "Addition To (Problem Statement # and project title)", and signed, and addressed the same as the original proposal.

- **Evaluation Process**

The proposal evaluations will be completed by the Department's Technical Advisory Panels (TAPs) and Program Steering Committees (PSCs). Final selection will be made by the Department's Research and Deployment Steering Committee. Proposals will be screened against the evaluation criteria below.

- **Proposal Evaluation Criteria**

- Responds well to problem statement and meets Department goals and objectives?
- Comprehensive Literature Search completed?
- Utility of research outcome: When will the ultimate product that is the subject of the research be available and is it likely to be deployed? What benefit (economic or other) will the project provide?

- Research objective: Are the stated objective, scope and motivation clear, valid, and logical?
- Methodology: Are the plans, methods, techniques and procedures feasible, clear, valid, adequately referenced, and state-of-the-art?
- Qualifications: Are the qualifications, capabilities, and experience of the proposed lead researcher and other key personnel sufficient to achieve the proposed objectives? If applicable, is proposed facility adequate for proposed work?
- Budget: Does the budget reflect the actual needs of the proposed work? Have the requests for personnel, equipment, supplies, etc. been fully justified?

Acceptance and Rejection of Submissions

The Department retains the right to disregard a minor deviation from the requirements and may, at its sole discretion, request supplemental information or clarification of that information submitted.

Negotiations with Selected Proposer

Once a full proposal is submitted, the Department may elect to negotiate with the selected respondent, leading to a written Agreement with the Department about implementing the proposal. Any agreement as a result of this CFS will be subject to all necessary State, Federal and Agency approvals. If an agreement cannot be reached, negotiations will cease and no contractual agreement written or implied will exist. The Department will not reimburse submitting organizations for any costs incurred in the preparation or submission of pre-proposals or proposals, or in the negotiation process.

This CFS shall not commit the Department to negotiate and execute any Agreement. The Department reserves the right to accept proposals that, in the sole judgment of the Department, are in the best interest of the State and regions. The Department reserves the right to reject any or all proposals or to modify or cancel, in part or in its entirety, this CFS.

Confidentiality

Proposal submittals are confidential. Selection committee members shall discuss the evaluation proceedings and content of proposals only with DRI staff and with members of the selection committees. Proposals that are not selected will not be reprinted or used for purposes not pertaining to this CFS process.

Amendments to the Requested Proposal

The Department reserves the right to amend this CFS by addendum prior to the final date of proposal submission.

General Information

Schedule

The schedule related to this CFS is as follows:

EVENT	DATE
CFS available to prospective Respondents	December 16, 2003
Written Question Submittal Deadline	January 7, 2004
Responses to Questions	January 9, 2004
Final Date for Pre-proposal Submission	January 16, 2004
Completion of Pre-proposal Evaluations*	February 13, 2004
Written Question Submittal Deadline	March 5, 2004
Responses to Questions	March 9, 2004
Final Date for Full Proposal Submission	March 10, 2004
Full proposal selection	June 2004

* By this date all respondents will be notified if their proposal has been selected for development into a full proposal.